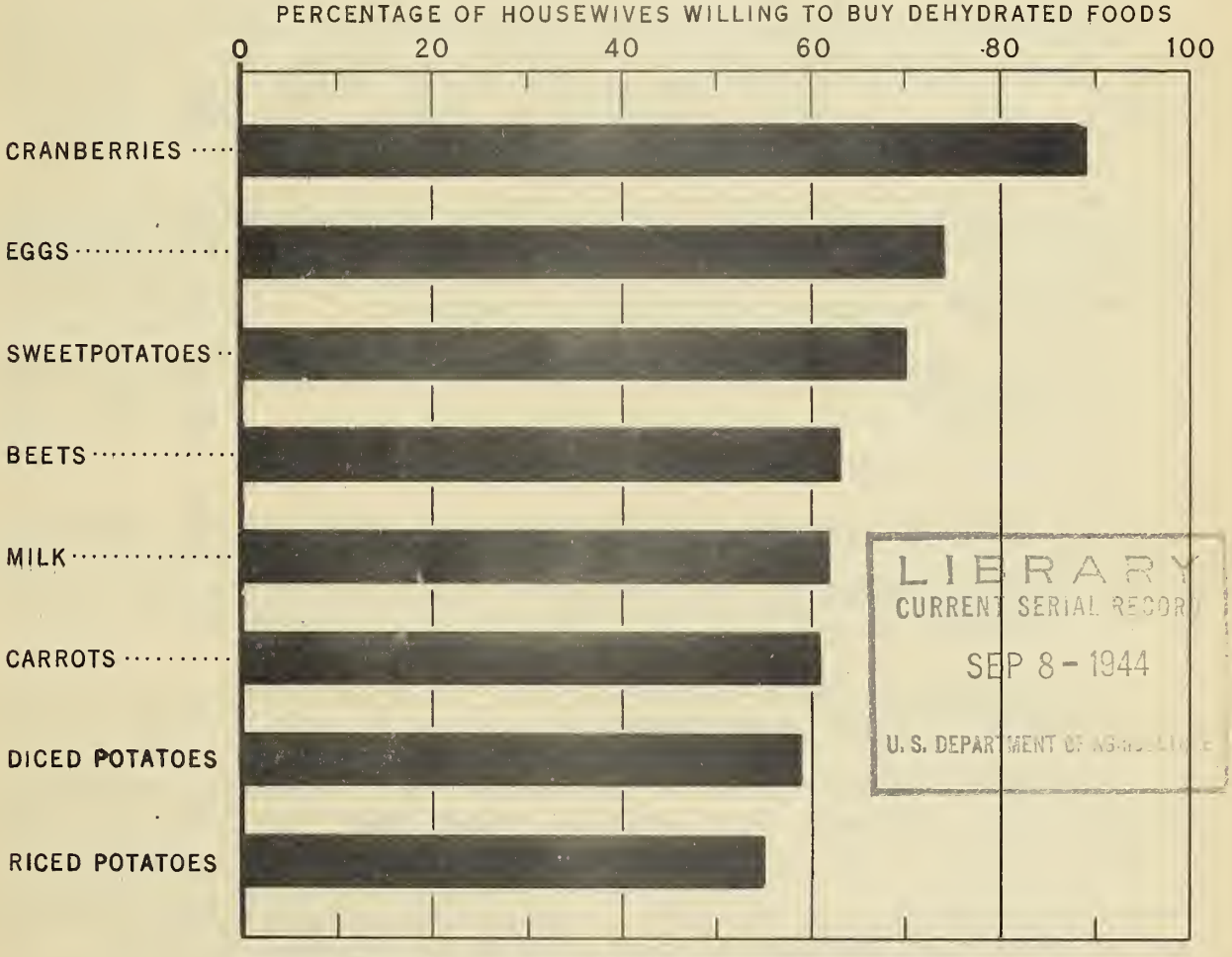
THE Marketing and Transportation SITUATION

BUREAU OF AGRICULTURAL ECONOMICS
UNITED STATES DEPARTMENT OF AGRICULTURE

MTS - 23 BAE JULY 1944

ACCEPTANCE OF DEHYDRATED FOODS BY CHICAGO HOUSEWIVES*



DATA FROM SURVEY CONDUCTED BETWEEN APRIL 17 AND MAY 31, 1944

U. S. DEPARTMENT OF AGRICULTURE NEG. 43784 BUREAU OF AGRICULTURAL ECONOMICS

Results of survey of Chicago housewives' willingness to buy dehydrated foods after using the product must be viewed as unduly favorable because of factors conducive to an upward bias. However, the data appear to disclose possibilities of a post-war market for a variety of dehydrated foods. The percentage of housewives "willing to buy" the dehydrated products is the total of those willing to buy the dehydrated product at a price either less than, equal to, or more than the price of the fresh product, assuming that both are available.

MARKETING AND TRANSPORTATION SITUATION

JULY 1944

PROBABLE CONSUMER ACCEPTANCE OF DEHYDRATED FOODS 1/

Requirements of the Armed Forces and lend-lease have resulted in a great expansion of facilities for dehydrating foods. The 1941 production of dehydrated vegetables was 25 million pounds. During the 1942 and 1943 seasons dehydration plant capacity was greatly increased, with nearly 225 million pounds to be produced during 1944. Similar expansion has occurred in plant capacity for dried eggs and to a lesser extent for dried milk.

Urgent questions soon will arise regarding post-war needs for dehydrated foods. Much of the existing capacity may not be needed when the war ends. Processors and distributors wish to know what dehydrated products are best adapted to civilian use, as a basis for determining the disposition of their drying equipment and their future role in food processing.

Between April 17 and May 31, 1944, a survey was conducted in Chicago, Illinois, to obtain an indication of the probable domestic market for dehydrated foods in the post-war period and also which foods would be most acceptable. The survey was designed to answer the following questions:

1 - Will housewives be willing to buy dehydrated foods if they are made available?

2 - Which foods are most likely to be bought?

3 - How do dehydrated foods compare in taste with fresh and canned foods?

4 - What advantages and disadvantages do housewives find in the use of dehydrated foods?

5 - Do housewives think dehydrated foods differ in nutritional value from fresh foods and canned foods?

Dehydrated foods were given to a cross section of Chicago housewives with no attempt made to influence their attitudes toward them. The foods used were diced white potatoes, riced white potatoes, sweetpotatoes, beets, carrots,

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1/ This article reports the results of a consumer reaction survey made by the Bureau of Agricultural Economics. The Office of Distribution, War Food Administration, assisted in obtaining the dehydrated products which were distributed to housewives. The Bureau of Human Nutrition and Home Economics furnished recipes. A number of private firms and organizations cooperated in the study, including: Little & Company, Inc., American Can Company, Thomas M. Royal & Company, Warriner Starch Corporation, The R. H. Osborne Company, A. D. Makepeace Company, Rogers Bros. Seed Company, Northwestern Potato Cooperative Association, Inc., Jack Gomperts & Company, Featherweight Foods, Inc., The Borden Company, Parkway Dried Egg Company, National Egg Products Association, Container Corporation of America, Shotwell Manufacturing Company, and Nestle's Milk Products, Inc.

cranberries, milk, and eggs. Each family was given three of these foods in sufficient quantities for serving at more than one meal. The 450 housewives in this sample were divided into six subsamples according to the foods they were given and the way the foods were packaged. The foods used within each subsample are shown below.

Group Ia	Group Ib	Group IIa	Group IIb	Group IIIa	Group IIIb
Diced potatoes (cans)	Diced potatoes (cellophane)	Sweet-potatoes	Sweet-potatoes	Carrots (cans)	Carrots (cellophane)
Cranberries	Cranberries	Beets	Beets	Riced potatoes	Riced potatoes
Milk - A	Milk - B	Milk - A	Milk - B	Eggs	Eggs

The first time a housewife was visited she was briefly interviewed to determine the extent of her previous experience with dehydrated foods. The foods were then presented and the housewife was told that the interviewer would return in 2 weeks. Among the 450 housewives who accepted the dehydrated foods there were 19 women from whom the interviewers could obtain no information when they made their return calls 2 weeks later. In the majority of these cases the interviewers could find no one at home. Nine percent of the housewives in Group I, 15 percent in Group II, and 15 percent in Group III did not use any of the foods they received. In a few cases personal circumstances prevented the women from using the foods.

Analysis of the sample indicated that the six groups comprised a representative sample of the population of Chicago. Accordingly, when in this report the attitudes of these housewives towards dehydrated foods are discussed, the findings are presented as representative of the reactions of Chicago housewives in general.

Housewives' reactions to the food were no different when packaged in cellophane bags or in tin cans. Since the food was used promptly, this survey did not test the relative keeping qualities of the two types of containers. Also there was no difference of statistical significance in the housewives' reactions to dried milk made by two different companies.

Housewives' experiences with dehydrated foods before the survey

Approximately 75 percent of the housewives who participated in this survey had heard of dehydrated foods and nearly half had used some of these foods. Dehydrated soup had been heard of by about 50 percent, vegetables by about 23 percent, eggs by about 18 percent, and milk by about 13 percent of the housewives. Some housewives had heard of more than one product while about 20 percent had not heard of any dehydrated foods.

Housewives had heard favorable comments about dehydrated foods in about 28 percent of the cases, unfavorable comments in about 7 percent, but the majority of the housewives had not heard anything definite about them. The most common favorable comments heard were that the product tasted good and had high nutritive value. About 38 percent of the housewives had a favorable opinion of dehydrated foods

prior to the survey and only 5 percent had an unfavorable opinion. The principal source of the housewives' information about dehydrated foods came from reading and listening to the radio. About 19 percent of them reported they had received information about dehydrated foods from acquaintances while 11 percent stated they had learned of them through members of the Armed Forces.

Attitude toward the purchase of dehydrated foods

When the interviewers called back on the housewives, more than 50 percent of them, including a few women who did not use the foods given to them, said they would buy the foods. This does not mean that the housewives would buy dehydrated foods in large quantities as substitutes for fresh or canned foods. Many of them probably would be willing to buy dehydrated foods for only occasional use. When asked the question "If dehydrated foods were on the market, would you buy them?" 57 percent answered "Yes," 28 percent answered "No," 5 percent "Don't know," and for 10 percent no answer was obtained. The number of housewives who would be willing to buy the individual foods after using them was ascertained by asking the housewives specifically whether they would be willing to buy the dehydrated foods that they had tried. Cranberries, eggs, and sweetpotatoes seem most likely to be purchased after initial use. For different products, percentages that would buy the food were as follows:

Cranberries	89 percent	Milk	62 percent
Eggs	74 percent	Carrots	61 percent
Sweetpotatoes	70 percent	Diced potatoes	59 percent
Beets	63 percent	Riced potatoes	55 percent

In general, most housewives who would be willing to buy dehydrated foods would not do so if they cost more than fresh and some would buy them only if they cost less. There is no basis for concluding from the data that housewives would buy large quantities of dehydrated foods as substitutes for fresh.

Table 1.- Comparison of Chicago housewives' willingness to buy dehydrated foods in competition with fresh foods

Product	Housewives	Willing to buy: Cost less than fresh	Willing to buy: Cost same as fresh	Willing to buy: Cost more than fresh	Willing to buy: Total	Not willing to buy
	Number	Percent	Percent	Percent	Percent	Percent
Diced potatoes	115	16	29	14	59	41
Riced potatoes	105	21	17	17	55	45
Sweetpotatoes	100	8	29	33	70	30
Beets	106	12	26	25	63	37
Carrots	112	12	25	24	61	39
Cranberries	98	13	32	44	89	11
Milk	184	16	25	21	62	38
Eggs	102	26	27	21	74	26

While housewives generally do not want to pay more for dehydrated foods than for the equivalent fresh foods, they were less likely to object to paying more for dehydrated foods than for canned foods. The majority of women who said they

would be willing to use dehydrated foods would buy the foods (except potatoes) if they cost more than canned foods. The results of the survey may be biased upward in this respect, since the housewives were given the dehydrated foods to use but not given any canned foods to use. Individuals tend to react more favorably to foods given them than to those they purchase.

Table 2.- Comparison of Chicago housewives' willingness to buy dehydrated foods in competition with canned foods

Product	Housewives	Willing to buy: Cost less than canned	Cost same as canned	Cost more than canned	Not ascertained	Total	Not willing to buy
	Number	Percent	Percent	Percent	Percent	Percent	Percent
Diced potatoes	115	7	4	9	39	59	41
Riced potatoes	105	10	7	12	26	55	45
Sweetpotatoes	100	4	12	35	19	70	30
Beets	106	7	13	35	8	63	37
Carrots	112	8	17	35	1	61	39
Cranberries	98	10	26	37	16	89	11
Milk	184	5	18	37	2	62	38

This study seems to indicate that housewives do not necessarily regard dehydrated foods as "cheap foods." When asked "What kind of people do you think would buy these foods?" less than 10 percent of the women said that persons with very low incomes would be attracted to dehydrated foods.

Because of the procedure used in the survey, it was inevitable that some housewives received foods which they did not use regularly. For instance, some housewives who seldom serve beets or cranberries were asked to try one of these foods. Ninety percent of the housewives who regularly use cranberries stated they would buy the dehydrated form while of those who did not use cranberries regularly only 65 percent stated they would use them in dehydrated form. Of the housewives who used beets regularly, 70 percent stated they would use the dehydrated product, but only 59 percent of those housewives who use beets irregularly stated they would use dehydrated beets. Regularity of use of a food may be taken as a measure of the housewife's favorable attitude toward that food. If this is true, there seems to be a carry-over attitude toward the food in general to use of the food in the dehydrated form.

Of the people who had a favorable opinion of the foods before trying, two-thirds would be inclined to buy the dehydrated foods while only one-half of the individuals who were not completely favorably inclined would be willing to buy dehydrated foods. A well designed campaign would be necessary to overcome some prejudices against dehydrated foods. Approximately 12 percent more housewives who had used dehydrated foods before the study would be more likely to be willing to buy them than those who had not used dehydrated foods.

The additional factors of race, education, income, age, country of origin, number of children, occupation of breadwinner, and employment of housewife were studied to ascertain if they had any relationship to the willingness of housewives to buy dehydrated foods. None of them proved to have a discernible relationship.

The outstanding reasons housewives gave for saying they would buy some dehydrated foods were that they tasted good and were easy to prepare. The reasons why housewives would buy some dehydrated foods are given below:

They taste good	35 percent
They are easy to prepare	21 percent
They keep well	5 percent
They save space	3 percent
They are economical	3 percent
They have high nutritive value	2 percent
Gave no reason for willingness to buy dehydrated foods	23 percent
Would buy no dehydrated foods	27 percent

(Percentages total more than 100 because some housewives gave more than one reason.)

Few housewives mentioned nutritive value of these foods, the fact that they keep a longer time than fresh foods, and that they save space. An educational program might bring these aspects of dehydrated foods more forcefully to housewives' attention.

The principal reasons housewives were not willing to buy certain dehydrated foods were because they believed they lacked the advantages of tastefulness and ease of preparation. A preference for fresh foods was the other important reason which made some housewives unwilling to buy dehydrated foods. The reasons that housewives gave for not desiring to buy dehydrated foods are given below:

They don't taste good	20 percent
Prefer fresh foods	14 percent
They are hard to prepare	10 percent
They have a poor appearance	2 percent
There are not many ways of serving dehydrated foods	1 percent
They have low nutritive value	1 percent
Gave no reason for unwillingness to buy dehydrated foods	23 percent
Offered no objection to buying dehydrated foods	33 percent

(Percentages total more than 100 because some housewives gave more than one reason.)

These results indicate that taste and ease or difficulty of preparation are the principal factors motivating housewives' acceptance or rejection of dehydrated foods. Advertising, of course, might make them more conscious of the importance of other qualities. These results point to the importance of improving the taste of dehydrated foods if wider consumer acceptance is to be obtained.

Experiences with the foods in the survey

As indicated, the housewives who took part in this survey were given enough of each food so that they could serve the food more than once. Approximately 75 percent of the housewives who used the foods liked their tastes as compared with about 20 percent who disliked them. The best-liked foods were cranberries and sweetpotatoes. The food most disliked was riced potatoes.

Table 3.- Taste preference of Chicago housewives for dehydrated foods

Product	Housewives	Liked the taste	Disliked the taste	Undecided	Not ascertained	Total
	Number	Percent	Percent	Percent	Percent	Percent
Diced potatoes	115	72	24	4	0	100
Riced potatoes	105	58	37	4	1	100
Sweetpotatoes	100	83	15	2	0	100
Beets	106	77	22	1	0	100
Carrots	112	78	17	5	0	100
Cranberries	98	89	10	0	1	100
Milk	184	69	24	5	2	100
Eggs	102	75	16	5	4	100

When the opinions of the other members of the family (as reported by the housewife) are taken into consideration, 56 percent of the women said that their families had liked all the foods served, 24 percent liked some and disliked others, 13 percent disliked all the foods, and the reaction from 7 percent was not ascertained. Both types of white potatoes and milk were mentioned frequently as having been disliked by the other members of the family. Only a small number of women specifically mentioned the reaction of their children; few of these disliked all of the dehydrated food they had eaten.

A small number of the housewives who used the foods said they tasted better than fresh foods. However, many more said dehydrated foods did not taste as good as fresh foods. Most housewives said there was no difference in the taste of cranberries and sweetpotatoes as compared with fresh foods.

The replies summarized in table 4 seem almost unreasonable in view of reactions reported by others. Even the most enthusiastic boosters for dried milk have not claimed that its taste is superior to that of fresh milk. It should be remembered, however, that tastes differ greatly. Many people cannot understand how others enjoy eating raw oysters, hominy grits, caviar, and hot tamales. It is possible, although these findings are by no means conclusive, that a significant proportion of people actually like dried milk better than fresh milk. The same may be said of the other products included in table 4.

Table 4.- Chicago housewives' opinions of the taste of dehydrated foods compared with comparable fresh foods

Product	Housewives	Taste better than fresh	No difference	Not as good as fresh	Don't know	Total
	Number	Percent	Percent	Percent	Percent	Percent
Diced potatoes	115	17	31	51	1	100
Riced potatoes	105	5	30	63	2	100
Sweetpotatoes	100	12	52	35	1	100
Beets	106	8	40	49	3	100
Carrots	112	18	40	41	1	100
Cranberries	98	30	49	15	6	100
Milk	184	18	24	55	3	100
Eggs	102	9	42	46	3	100

Of the housewives who used the foods, the proportion that found they tasted better than canned foods was considerably larger than the proportion that preferred them to fresh products. This preference over canned goods was particularly marked for cranberries, milk, and carrots. Many women were unfamiliar with diced potatoes, riced potatoes, and sweetpotatoes in canned form, but those who could make a judgment preferred these foods in dehydrated form.

Table 5.- Chicago housewives' opinions of the taste of dehydrated foods compared with comparable canned foods 1/

Product	Housewives	Taste better than canned	No difference	Not as good as canned	Don't know	Not ascertained	Total
	Number	Percent	Percent	Percent	Percent	Percent	Percent
Diced potatoes	115	10	2	3	71	14	100
Riced potatoes	105	12	2	3	72	11	100
Sweetpotatoes	100	33	10	8	47	2	100
Beets	106	32	19	22	26	1	100
Carrots	112	45	13	14	25	3	100
Cranberries	98	52	20	9	19	0	100
Milk	184	53	16	13	16	2	100

1/ Percentages are based on the number of housewives who used each food.

An attempt was made to obtain comparisons with frozen foods but such a small number of housewives had used comparable dehydrated and frozen foods that the replies are not statistically significant.

The reconstitution of dehydrated foods takes more time than the preparation of canned foods, and some fresh foods. Moreover, most of the housewives were using the foods for the first time and were unfamiliar with the steps required. An analysis of the experiences of women in preparing dehydrated foods involved the determination of (1) does reconstitution take so long that housewives will not use dehydrated foods, and (2) do housewives find these foods difficult to prepare after they have been reconstituted.

Although the time required for preparing dehydrated foods varies from product to product, the housewives in this survey indicated that the difference in preparation time between the dehydrated product and the product in its usual form is not great enough to be an important consideration in deciding whether to buy the foods. Most women said that the dehydrated foods took a shorter time to prepare than fresh foods or that there was no difference between the two types of food.

Table 6.- Comparison of time required to prepare dehydrated and fresh foods by Chicago housewives

Product	Housewives	Longer time than fresh	No difference	Shorter time than fresh	Don't know	Not ascertained	Total
	Number	Percent	Percent	Percent	Percent	Percent	Percent
Diced potatoes	115	33	21	45	1	0	100
Riced potatoes	105	17	15	67	1	0	100
Sweetpotatoes	100	29	20	46	4	1	100
Beets	106	28	15	52	4	1	100
Carrots	112	31	23	45	1	0	100
Cranberries	98	12	20	64	4	0	100
Milk	184	45	39	8	2	6	100
Eggs	102	25	40	34	1	0	100

Those women who said that dehydrated foods took longer to prepare were asked how this would affect their buying of dehydrated food. For practically every food, more of the women said they would still buy the dehydrated form than said they would not buy it. Half of the women who said that diced potatoes and beets took longer to prepare said they would not buy those particular foods.

Table 7.- Effect on use of dehydrated foods of a longer preparation time than fresh foods

Product	Housewives	Would use dehydrated foods	Would use some dehydrated foods	Would not use dehydrated foods	Not ascertained	Total
	Number	Percent	Percent	Percent	Percent	Percent
Diced potatoes	38	27	18	50	5	100
Riced potatoes	18	45	10	45	0	100
Sweetpotatoes	29	52	3	42	3	100
Beets	30	43	0	53	4	100
Carrots	34	41	20	39	0	100
Cranberries	12	50	17	33	0	100
Milk	83	45	10	37	8	100
Eggs	25	52	20	28	0	100

That many women considered dehydrated foods time saving rather than time consuming is shown in their answers to two other questions. When asked what type of women would use dehydrated foods, about 30 percent said that people who were busy and needed to save time would be interested in this type of food. When asked to give the advantages they saw in dehydrated foods, 30 percent of the housewives said that these foods took a shorter time to prepare. (Other advantages mentioned frequently are that dehydrated foods are relatively nonperishable and they save space.)

Less than 10 percent of the housewives stated that the preparation of the food was difficult. Many pointed out that the vegetables were easy to prepare because peeling and cleaning were unnecessary and they could do other things while the foods soaked. Those housewives who had difficulties said they found it hard to achieve the texture and appearance they desired--the carrots were "hard as rocks," the potatoes were "lumpy" or "soggy." Several women complained that the mashed potatoes had a grayish color.

Housewives' opinions of the nutritive value of dehydrated foods

During the war the general publicity about dehydrated foods has emphasized their space-saving value. Little has been said about their nutritive value. An attempt was made in this survey to determine what the women thought of the nutritive value of dehydrated foods. More than 39 percent of them said that dehydrated foods are not different from fresh foods in nutritive value but approximately 18 percent said that fresh foods are better, 22 percent of the women did not have an opinion, and 8 percent stated that dehydrated foods had higher nutritive value than fresh foods. Information was not obtained from 13 percent.

Less than 3 percent of the women said that dehydration causes foods to lose vitamins and minerals. Most of the reasons given by those who said dehydrated foods had less nutritive value were very general.

Forty percent of the housewives said that dehydrated foods had more nutritional value than canned foods and approximately one-fourth said there was no difference, 7 percent said canned foods were the better, 13 percent did not know, and information was not ascertained from 13 percent.

The relatively low acceptability of both the diced and riced white potatoes may be attributable partly to unsatisfactory recipes. Many of the housewives complained the potatoes turned dark and soggy and were unsatisfactory for that reason. This condition might be corrected by the improvement of the recipes.

Conclusions

This investigation of consumers' reaction to dehydrated foods is an initial effort, and considerable caution should be exercised in interpreting the results. There is little doubt that the nature of the experiment and of the interviewing methods tended to increase the apparent acceptability of the dehydrated foods. This fact should be considered in the evaluation of the present study and a certain discount should be applied to many of the data presented.

There are a number of reasons why the results of this study may exaggerate consumer preferences for dehydrated foods. Individuals are more favorably inclined toward products given them than to products they buy. It was impossible to avoid informing consumers they were participating in an experiment, and they may have been unconsciously motivated to some extent by a mistaken desire to "help" by reporting "favorable" results.

Many of the consumers no doubt did not have fresh or canned products of the same type with which to make a direct comparison at the time the dehydrated products were used, and if the latter were acceptable they might sometimes be inclined to overlook the greater acceptability of the competitive product.

It should be noted, however, that the specific findings of the survey are reasonably consistent with each other and that a number of tests commonly applied to the results of such surveys tend to give confidence in the general indications. It is believed that if successive samples representing the Chicago population were selected and the survey repeated in the same manner, the results would not be significantly different.

The important point in using the results of this study is to avoid interpreting them in ways not justified by the character of the questions. It should not be concluded, for example, merely because housewives said they would buy a certain dehydrated product, that they would be willing to buy all of their supplies of that commodity in dehydrated form. Obviously, they would not buy dehydrated products if prices were much higher than those of competitive products. It should be carefully noted, also, that the proportion of all the housewives willing to buy represents a proportion of consumers which have actually used the product, and there is no justification for expecting that such a proportion of all potential consumers, many of whom have not had an opportunity to use the product, would make initial purchases if dehydrated foods were offered for sale in grocery stores. In other words, the initial sales resistance to any new product had been overcome by leaving

the free samples with directions requesting that the product be tried. These results suggest that free samples, instructions on use, and personal contact greatly help to break down initial sales resistance. They also suggest that a focal point for further research is the problem of how to induce consumers initially to buy or to try dehydrated foods.

The real significance of the results of this investigation is that a large proportion of housewives do not appear to be definitely prejudiced against dehydrated foods, as many people have thought, and are willing to consider them with competitive foods when making purchases. This suggests that there may be a substantial potential post-war civilian market for many dehydrated foods. However, it is important to keep in mind that there were significant differences in consumer acceptance of different dehydrated foods. Some dehydrated foods appeared to be much more acceptable to consumers than others. This study does not furnish a quantitative indication of the size of this potential market, partly because of the limitations noted above.

Acceptability of dehydrated foods will be affected by future changes in the quality of dehydrated foods relative to that of competitive products, in the extent of consumer knowledge of the nutritive and other qualities of dehydrated and competitive foods, by possible reductions in the time required for reconstitution, by changes in the types of packages used, by advertising and promotional campaigns, by the developments of new and improved recipes, and by changes in relative prices.

The results of the present study were more favorable to dehydrated foods than many people connected with the trade would have predicted. In view of this fact, it would seem highly desirable, before basing any extensive program on these results, that they be confirmed through further research and experimentation.

FARM-RETAIL PRICE SPREADS, JUNE 1944

Charges for marketing farm food products increase 3 percent, May to June

Charges for marketing a basket of farm food products representing quantities purchased annually by a typical workingman's family advanced from $203 in May to $209 in June 1944. These charges include Government payments to marketing agencies--chiefly to food processors--totaling $17 for the quantities of foods in the family basket. Government marketing payments have been unchanged at $17 since February 1944. The entire increase in marketing charges was due to a widening of the marketing margin or farm-retail price spread.

Total marketing charges for June 1944 were the highest recorded since June 1943 and represented an increase of $14 or 7 percent over the recent low of $195 for March 1944. June marketing charges were about 11 percent above the pre-war 1935-39 average of $189.

Farmer's share of consumer's food dollar drops to 12-month low

Falling prices paid to farmers for food products combined with increasing prices at retail to reduce the farmer's share of the consumer's dollar spent for farm food products to 56 cents for June 1944. The revised estimate of the share for May was 57 cents following 9 months during which the farmer's share did not drop below 58 cents. The farmer's share at 56 cents in June 1944 was the lowest since June 1943 when his share amounted to 55 cents. Recent levels of the farmer's share rival the highs attained during World War I and are well above the pre-war 1935-39 average of 42 cents, but the recent high levels in the farmer's share have been made possible in part through Government payments to marketing agencies which covered a portion of marketing charges and resulted in a narrowing of the marketing margin or differential between retail cost to consumer and payments to farmers for equivalent produce. If cost of marketing payments paid by the Government is added to the retail cost of these foods paid by consumers, the farmer's share of the total food cost is reduced from 56 to 54 percent for June 1944.

Food prices advance at retail, decline at farm, for third successive month

Since March 1944 retail prices of farm food products have been advancing while prices received by farmers for equivalent produce have been falling. From March to June retail cost of the family food basket rose from $433 to $439, an increase of more than 1 percent. During the same period payments to farmers for equivalent produce fell from $255 to $247, a decline of about 3 percent. These divergent changes combined to show an increase in the marketing margin (not including Government marketing payments) amounting to $14 or 8 percent from March to June.

Retailers' margins steadied during the past year

Comparison of trends in wholesale prices with trends in retail prices of farm food products show that changes in prices at these two levels have been nearly proportional during the past year. This indicates that the margin of retailers as a percentage of retail sales value has experienced only minor variation since July 1943. The retailers' percentage margin during the last year has averaged slightly lower than during the 5 pre-war years, 1935-39. None of the Government marketing payments is paid to food retailers.

Table 8. - Annual family purchases of 58 foods

Year and month	Cost at retail	Paid to farmers	Marketing margin	Government marketing payments	Total marketing charges 2/	Farmer's share
	Dollars	Dollars	Dollars	Dollars	Dollars	Percent
1913-15 average	236	135	121	0	121	53
1920	514	272	242	0	242	53
1929	415	195	220	0	220	47
1935-39 average	332	141	191	3/-2	189	42
1941	342	164	178	0	178	48
1942	398	209	189	0	189	53
1943	447	255	192	8	200	57
1943 - June	470	260	210	10	220	55
July	451	255	196	12	208	57
Aug.	440	255	185	12	197	58
Sept.	438	255	183	12	195	58
Oct.	440	256	184	13	197	58
Nov.	440	256	184	14	198	58
Dec.	440	258	182	16	198	59
1944 - Jan.	440	256	184	16	200	58
Feb.	436	253	183	17	200	58
Mar.	433	255	178	17	195	58
Apr.	433	253	180	17	197	58
May	436	4/ 250	4/186	17	4/203	4/ 57
June	439	5/ 247	192	17	5/209	5/ 56

1/ Important food products produced by American farmers combined in quantities representing annual purchases by a typical workingman's family. Retail price average for 56 cities from Bureau of Labor Statistics. 2/ Marketing margin plus Government marketing payments. 3/ Processing taxes in 1935. 4/ Revised. 5/ Preliminary.

Table 9. - Food cost and expenditures compared with total income per person, United States average 1/

Year and month	Total income	Total expenditures for consumer goods and services	Food expenditures: Actual	Food expenditures: As percentage of Total income	Food expenditures: As percentage of Total expenditures for goods and services	Cost to consumer of fixed quantities of foods representing average annual consumption per person, 1935-39: Actual	Cost to consumer of fixed quantities of foods representing average annual consumption per person, 1935-39: As percentage of Total income	Cost to consumer of fixed quantities of foods representing average annual consumption per person, 1935-39: As percentage of Total expenditures for goods and services
	Dol.	Dol.	Dol.	Dol.	Pct.	Dol.	Pct.	Pct.
1935-39 average	520	456	2/118	2/ 23	2/ 26	2/118	2/ 23	2/ 26
1941	692	560	2/144	2/ 21	2/ 26	2/125	2/ 18	2/ 22
1942	857	612	2/199	2/ 23	2/ 33	2/149	17	2/ 24
1943	2/1,042	685	2/219	2/ 21	2/ 32	2/170	16	2/ 25
	Annual rates by months, seasonally adjusted							
1944 - Jan.	1,107	724	2/231	2/ 21	2/ 32	2/171	15	2/ 24
Feb.	2/1,129	738	2/233	2/ 21	2/ 32	2/170	2/ 15	2/ 23
Mar.	2/1,125	690	2/230	20	33	2/170	15	2/ 25
Apr.	1,120	706	223	20	32	170	15	24

1/ See notes in original table p. 3, April-May 1943 issue. 2/ Revised.

Table 10.- Price spreads between the farmer and the consumer - food products, June 1944

Retail commodity	Table no. 1/	Retail: Unit	Retail: Price	Farm equivalent: Quantity	Farm equivalent: Value	Actual margin 2/	Farm value as percentage of retail price
			Cents		Cents	Cents	Percent
Pork products	11	1 lb. prin. pork products	28.8	1.90 lb. live hog	23.9	4.9	83
Dairy products	12	100 lb. milk equivalent	425.2	100 lb. milk equivalent	3/252.3	3/172.9	59
Hens	13	1 lb.	46.0	1.11 lb.	26.4	19.6	57
Eggs	14	1 doz.	45.7	1 doz.	28.1	17.6	61
White flour	15	1 lb.	6.5	1.41 lb. wheat	3.4	3.1	52
White bread	16	1 lb.	8.7	.97 lb. wheat	2.3	6.4	26
Corn meal	17	1 lb.	6.2	1.5 lb. corn	3.1	3.1	50
Rolled oats	18	1 lb.	9.4	1.78 lb. oats	4.4	5.0	47
Corn flakes	19	8-oz. pkg.	6.5	1.275 lb. corn	2.6	3.9	40
Wheat cereal	20	28-oz. pkg.	23.2	2.065 lb. wheat	4.9	18.3	21
Rice	21	1 lb.	12.9	1.51 lb. rough rice	5.9	7.0	46
Navy beans	22	1 lb.	10.7	1 lb. dry beans	6.1	4.6	57
Oranges	24	1 doz.	48.2	1/17 box	17.9	30.3	37
Potatoes	25	1 lb.	5.2	1 lb.	2.1	3.1	40
Apples	35	1 lb.	12.1	1 lb.	6.5	5.6	54
Lamb products	37	1 lb. prin. lamb cuts	35.6	2.16 lb. live lamb	28.5	7.1	80
Sweetpotatoes	38	1 lb.	12.7	1 lb.	4.2	8.5	33
Rye bread	39	1 lb.	9.4	.39 lb. rye and .64 lb. wheat	2.3	7.1	24
Whole wh. bread	40	1 lb.	10.1	.92 lb. wheat	2.2	7.9	22
Macaroni	41	1 lb.	15.7	1.72 lb. durum wheat	4.0	11.7	25
Soda crackers	42	1 lb.	18.9	1.085 lb. wheat	2.6	16.3	14
Peanut butter	44	1 lb.	28.4	1.73 lb. peanuts	13.6	14.8	48
58 foods combined	8	Annual family consumption	$439	Annual family consumption 3/	$247	3/$192	56

1/ Table numbers refer to numbering in original 1936 report and annual supplements entitled "Price Spreads Between the Farmer and the Consumer."
2/ Margins not adjusted to allow for Government marketing payments and taxes.
3/ Preliminary.
Retail prices from the Bureau of Labor Statistics.

Table 11 .- Price spreads between the farmer and the consumer - food products, retail price and farm value, June 1944

Commodity	Retail unit	Retail price				Percentage change to June 1944 from-		Farm equivalent	Farm value				Percentage change to June 1944 from-	
		1935-39 average	June 1943	May 1944	June 1944	June 1943	May 1944		1935-39 average	June 1943	May 1944	June 1944	June 1943	May 1944
		Cents	Cents	Cents	Cents	Percent	Percent		Cents	Cents	Cents	Cents	Percent	Percent
Pork products	1 lb. prin. pork products	25.3	31.6	28.7	28.8	- 9	1/	1.90 lb. live hogs	15.7	25.8	24.1	23.9	- 7	- 1
Dairy products	100 lb. milk equiv.	324.0	427.1	425.4	425.2	1/	1/	100 lb. milk equiv.	146.0	246.4	2/254.8	3/252.3	+ 2	- 1
Hens	1 lb.	31.7	44.4	46.5	46.0	+ 4	- 1	1.11 lb.	16.5	27.9	27.1	26.4	- 5	- 3
Eggs	1 doz.	36.0	51.7	44.9	45.7	- 12	+ 2	1 doz.	21.7	35.2	27.2	28.1	- 20	+ 3
White flour	1 lb.	4.5	6.1	6.5	6.5	+ 7	0	1.41 lb. wheat	2.0	2.9	3.5	3.4	+ 17	- 3
White bread	1 lb.	8.2	8.8	8.6	8.7	- 1	+ 1	0.97 lb. wheat	1.3	2.0	2.4	2.3	+ 15	- 4
Corn meal	1 lb.	5.0	5.6	6.1	6.2	+ 11	+ 2	1.5 lb. corn	1.8	2.8	3.1	3.1	+ 11	0
Rolled oats	1 lb.	7.4	8.6	8.9	9.4	+ 9	+ 6	1.78 lb. oats	1.9	3.6	4.4	4.4	+ 22	0
Corn flakes	8-oz. pkg.	7.8	6.7	6.5	6.5	- 3	0	1.275 lb. corn	1.6	2.4	2.6	2.6	+ 8	0
Wheat cereal	28-oz. pkg.	24.3	23.2	23.3	23.2	0	1/	2.065 lb. wheat	2.9	4.3	5.1	4.9	+ 14	- 4
Rice	1 lb.	8.2	12.6	12.8	12.9	+ 2	+ 1	1.51 lb. rough rice	2.5	6.0	6.0	5.9	- 2	- 2
Navy beans	1 lb.	6.9	10.0	10.6	10.7	+ 7	+ 1	1 lb. dry beans	3.5	5.6	6.1	6.1	+ 9	0
Oranges	1 doz.	31.5	43.7	46.8	48.2	+ 10	+ 3	1/17 box	9.3	17.5	17.6	17.9	+ 2	+ 2
Potatoes	1 lb.	2.5	5.6	4.6	5.2	- 7	+ 13	1 lb.	1.2	3.1	2.2	2.1	- 32	- 5
Apples	1 lb.	5.5	14.9	11.8	12.1	- 19	+ 3	1 lb.	1.9	5.6	6.6	6.5	+ 16	- 2
Lamb products	1 lb. prin. lamb cuts	27.2	38.0	35.5	35.6	- 6	1/	2.16 lb. live lamb	16.2	29.2	28.9	28.5	- 2	- 1
Sweetpotatoes	1 lb.	4.4	18.1	12.2	12.7	- 30	+ 4	1 lb.	1.5	4.0	4.3	4.2	+ 5	- 2
Rye bread	1 lb.	9.1	9.4	9.4	9.4	0	0	0.39 lb. rye & 0.64 lb. wheat	1.3	1.9	2.3	2.3	+ 21	0
Whole wheat bread	1 lb.	9.3	10.2	10.1	10.1	- 1	0	0.92 lb. wheat	1.3	1.9	2.3	2.2	+ 16	- 4
Macaroni	1 lb.	15.0	15.5	15.7	15.7	+ 1	0	1.72 lb. durum wheat	2.3	3.5	4.2	4.0	+ 14	- 5
Soda crackers	1 lb.	16.9	17.7	19.0	18.9	+ 7	- 1	1.085 lb. wheat	1.5	2.2	2.7	2.6	+ 18	- 4
Peanut butter	1 lb.	19.3	33.1	28.5	28.4	- 14	1/	1.73 lb. peanuts	6.1	12.1	13.4	13.6	+ 12	+ 1
58 foods combined	Annual family consumption	$332	$470	$436	$439	- 7	+ 1	Annual family consumption	$141	$260	2/$250	3/$247	- 5	- 1

1/ Less than 0.5 percent. 2/ Revised. 3/ Preliminary.

Retail prices are 56-city averages as published by the Bureau of Labor Statistics in farm values are calculated from U. S. average farm price.

Table 12.- Price spreads between the farmer and the consumer - food products; margins, and farm value as percentage of retail price, June 1944

Commodity	Retail unit	Margins 1/				Percentage change to June 1944 from-		Farm value as percentage of retail price			
		1935-39 average	June 1943	May 1944	June 1944	June 1943	May 1944	1935-39 average	June 1943	May 1944	June 1944
		Cents	Cents	Cents	Cents	Percent	Percent	Percent	Percent	Percent	Percent
Pork products	1 lb. prin. pork products	9.6	5.8	4.6	4.9	- 16	+ 7	62	82	84	83
Dairy products	100 lb. milk equiv.	178.0	180.7	2/170.6	3/172.9	- 4	+ 1	45	58	60	59
Hens	1 lb.	15.2	16.5	19.4	19.6	+ 19	+ 1	52	63	58	57
Eggs	1 doz.	14.3	16.5	17.7	17.6	+ 7	- 1	60	68	61	61
White flour	1 lb.	2.5	3.2	3.0	3.1	- 3	+ 3	44	48	54	52
White bread	1 lb.	6.9	6.8	6.2	6.4	- 6	+ 3	16	23	28	26
Corn meal	1 lb.	3.2	2.8	3.0	3.1	+ 11	+ 3	36	50	51	50
Rolled oats	1 lb.	5.5	5.0	4.5	5.0	0	+ 11	26	42	49	47
Corn flakes	8-oz. pkg.	6.2	4.3	3.9	3.9	- 9	0	21	36	40	40
Wheat cereal	28-oz. pkg.	21.4	18.9	18.2	18.3	- 3	+ 1	12	19	22	21
Rice	1 lb.	5.7	6.6	6.8	7.0	+ 6	+ 3	30	48	47	46
Navy beans	1 lb.	3.4	4.4	4.5	4.6	+ 5	+ 2	51	56	58	57
Oranges	1 lb.	22.2	26.2	29.2	30.3	+ 16	+ 4	30	40	38	37
Potatoes	1 lb.	1.3	2.5	2.4	3.1	+ 24	+ 29	48	55	48	40
Apples	1 lb.	3.6	9.3	5.2	5.6	- 40	+ 8	35	38	56	54
Lamb products	1 lb. prin.lamb cuts	11.0	8.8	6.6	7.1	- 19	+ 8	60	77	81	80
Sweetpotatoes	1 lb.	2.9	14.1	7.9	8.5	- 40	+ 8	34	22	35	33
Rye bread	1 lb.	7.8	7.5	7.1	7.1	- 5	0	14	20	24	24
Whole wheat bread	1 lb.	8.0	8.3	7.8	7.9	- 5	+ 1	14	19	23	22
Macaroni	1 lb.	12.7	12.0	11.5	11.7	- 2	+ 2	15	23	27	25
Soda crackers	1 lb.	15.4	15.5	16.3	16.3	+ 5	0	9	12	14	14
Peanut butter	1 lb.	13.2	21.0	15.1	14.8	- 30	- 2	32	37	47	48
58 foods combined	Annual family consumption	$191	$210	2/ $186	3/ $192	- 9	+ 3	42	55	2/57	56

1/ These margins have not been adjusted to allow for Government marketing payments and taxes. 2/ Revised.
3/ Preliminary.

Table 13. - Farm products: Indexes of prices at several levels of marketing, 1935-39 = 100

Year and month	Cost of living of city families 1/	Foods				Fiber		Whole-sale prices of all farm products 2/	Prices received by farmers for all products 3/	Prices paid by farmers 3/
		Retail prices of all foods 1/	Whole-sale prices 2/	Prices received by farmers for 58 foods 3/	Retail prices of clothing 1/	Whole-sale prices of textile products 2/	Prices received by farmers for cotton and wool 4/			
1913	71	80	81	95	69	81	111	94	95	81
1914	72	82	82	97	70	77	97	94	95	80
1916	78	91	96	110	78	99	131	111	111	100
1918	108	134	151	174	128	193	281	195	190	141
1920	143	169	174	193	201	232	282	198	199	162
1929	122	132	126	138	115	127	167	138	137	123
1932	98	86	77	62	91	77	55	63	61	86
1935	98	100	106	98	97	100	109	104	102	100
1936	99	101	104	108	98	101	114	106	107	100
1937	103	105	108	113	103	107	111	114	114	105
1938	101	98	93	92	102	94	81	90	89	98
1939	99	95	89	89	100	98	85	86	88	97
1940	100	97	90	94	102	104	97	89	92	99
1941	105	105	105	116	106	119	131	108	115	105
1942	116	124	126	148	124	136	178	139	148	122
1943	124	138	135	181	130	137	190	162	177	132
1939-Aug.	---	94	85	85	---	96	85	80	83	96
Sept.	101	98	95	95	100	101	91	90	92	98
1943-June	125	142	139	184	128	137	192	166	179	132
July	124	139	136	181	129	137	189	165	174	133
Aug.	123	137	134	181	129	137	190	163	179	133
Sept.	124	137	133	181	132	137	193	162	179	133
Oct.	124	138	133	182	133	137	193	161	180	133
Nov.	124	137	134	182	134	138	186	160	181	134
Dec.	124	137	134	183	135	138	190	160	185	135
1944-Jan.	124	136	133	182	135	138	192	160	186	136
Feb.	124	134	132	180	135	138	190	161	185	137
Mar.	124	134	132	181	137	138	190	163	186	137
Apr.	124	135	133	179	137	138	192	162	186	137
May	125	136	133	5/177	137	138	190	162	185	137
June	6/	6/	135	175	6/	138	193	165	184	137

1/ From "Changes in Cost of Living" Bureau of Labor Statistics.
2/ Calculated from figures of the Bureau of Labor Statistics.
3/ Based on figures published by the United States Department of Agriculture.
4/ Cotton and wool prices weighted by production in the period 1935-39.
5/ Revised.
6/ Not available.

Table 14. - Indexes of consumer income and of hourly earnings in marketing
1935-39 = 100

Year and month	Nonagricultural income payments 1/	Monthly earnings per employed factory worker 2/	Hourly earnings in marketing enterprises			
			Class I steam railways 3/	Food processing 4/	Food marketing 5/	Cotton processing 4/
1929	122	118	93	---	---	---
1935-39 average	100	100	100	100	100	100
1940	115	111	105	110	105	106
1941	138	132	106	116	110	119
1942	170	166	119	128	120	139
1943	207	196	121	139	130	152
1943 - May	203	196	120	139	129	152
June	207	196	119	140	130	152
July	209	194	119	140	130	152
Aug.	210	197	120	140	131	151
Sept.	211	201	121	140	132	154
Oct.	213	204	121	142	133	153
Nov.	217	205	123	145	134	153
Dec.	219	202	124	146	132	153
1944 - Jan.	222	205	132	146	135	154
Feb.	224	206	137	146	135	154
Mar.	225	207	133	146	135	156
Apr.	224	206	134	148	137	161
May	6/225	6/209	133	149	138	163

1/ United States Department of Commerce estimates, Adjusted for seasonal variation. Revised series.
2/ Prepared in the Bureau of Agricultural Economics from data of the Bureau of Labor Statistics, adjusted for seasonal variation.
3/ Compiled from data published by the Interstate Commerce Commission.
4/ Bureau of Labor Statistics.
5/ Weighted composite of earnings in steam railways, food processing, wholesaling, and retailing.
6/ Preliminary estimates.